

Brown tide

Human Health Risk

Ecological Risk M - L

Socioeconomic Risk L

Brown tide blooms are caused by rapid growth of a golden-brown algae in shallow saltwater estuaries. Natural processes that result in high salinity and low flow conditions could be causing these blooms, which typically occur during the months of May to July, and sometimes again in early fall.

What's at risk?

Blooms are a recurring natural phenomenon in southern Barnegat Bay and Little Egg Harbor. Blooms have also been documented in Great Bay, coastal bays, and Great Egg Harbor. Any shallow estuary with similar characteristics and the right combination of environmental variables could develop a brown tide bloom, potentially affecting 25-50% of the state's estuarine waters. Socioeconomic effects are restricted to bay-front property owners, commercial shellfish producers, and recreational users in Barnegat Bay and Little Egg Harbor.

What are the ecological impacts in New Jersey?

Recurring brown tide blooms have been documented for five of the past seven years. In 1999 and 2000, the blooms were significantly more severe. Blooms discolor the water, reducing the amount of light penetration, and subsequently the growth of underwater vegetation such as eelgrass. Eelgrass beds provide nursery habitat for young aquatic animals and are necessary to sustain healthy populations of fish and shellfish. Blooms also interfere with feeding and growth of juvenile clams, mussels, and scallops. Unusually high mortality rates (up to 80%) for bay scallops have been documented in Long Island bays experiencing brown tide blooms. Research is needed to determine the similarities between Long Island and New Jersey bay conditions to accurately assess risks to New Jersey bays. Populations may rebound once the bloom subsides, but blooms lasting longer than one to two months may cause severe impacts to shellfish populations.

What are the socioeconomic impacts in New Jersey?

Brown tide blooms are a significant concern in areas where they occur. Bay front property values may be negatively affected and there is a local employment impact associated with a reduction or loss of shellfish. However, these socioeconomic effects are restricted to a relatively small number of bay-front property owners, commercial shellfish producers, and recreational users in Barnegat Bay and Little Egg Harbor. Thus the statewide socioeconomic impacts are judged to be low.

What's being done?

The Brown Tide Assessment Project was established in 2000 to monitor the spatial and temporal extent of brown tide blooms through 2002. Because brown tide blooms are natural phenomena, environmental and biological factors need to be studied in order to assess the extent of impacts on marine ecosystems and to develop effective management strategies.